

Survival Piece II
Notations on the Ecosystems
of the Western Saltworks
with the Inclusion of Brine Shrimp

1971 Los Angeles County Museum of Art, CA:

Art and Technology Exhibition

2002 Les Abattoirs, Toulouse, France



In 1971, when the landmark *Art and Technology* exhibition—which included my *Artificial Aurora Borealis*—was being installed at the Los Angeles County Museum of Art (LACMA), there was much excitement and press. Maurice Tuchman, the senior curator, had put his two best talents to work on the exhibition: One of them was coordinating large installations with heroic themes, the other generating funding and publicity. Together these strategies made for powerful public notice.

Claes Oldenburg's *Ice Bag* was being constructed outside the museum entrance; one of David Smith's Cubi sculptures was on the next level down. Below that, at street level, was an open space, perhaps 12 by 18 meters, with a big pond on either side. The water in the ponds was very clear. Tuchman explained that they used algaecide, a lot of it, to keep the water clean. He asked if I had any ideas that would suit this space—and if so, whether I could do something inexpensively.

I had recently finished my first eco-critical works, and something about all that algaecide bothered me. I wondered why pure water was aesthetically necessary. I began talking to scientists at Scripps Institution of Oceanography, not far from the art department at University of California, San Diego (UCSD), and soon found myself in the company of two very sophisticated algologists, Richard Eppley and Michael Mullin. I asked if they knew of any algae that changed colors. They thought it was an odd question ... but suggested I get on a plane and fly to San Francisco, and look down at the salt ponds as the plane was coming in for landing. So I did.

Some ponds were hues of green, some reddish-pinkish, and one brown. Eppley and Mullin later explained that an algae called *Dunaliella* grew in those ponds. In normal seawater *Dunaliella* behaved as blue-green algae, but as water evaporated and the ponds turned saltier, the algae grew carotene so that it was able to resist the increased salinity. This accounted for the different colors in the ponds, as they moved from blue-green to almost brick red. They said that the clear ponds with white around the edges were 10 times saltier than seawater, and nothing could

live in them. These ponds were being prepared to harvest salt. Then they explained that a small crustacean called *Artemia*—brine shrimp—lived in the other ponds. These brine shrimp, like the *Dunaliella*, were among the only species that could live in such salty water, and their eggs were so durable that they could survive space flight. They also said that the *Dunaliella*–*Artemia* interaction in extremely saline waters was the simplest working ecosystem that they knew of. In that moment a work was born.

I gathered inoculations from salt ponds with varying salinities, and put them in 19-liter glass jars on the roof of the algology labs at Scripps. I fed them liquid plant food. My *Dunaliella* were fruitful and multiplied. I added brine shrimp. They, too, were fruitful and multiplied.

The Dada aspect of my persona liked the idea of growing algae between the two large ponds at the museum, where so much effort had been spent on killing algae. So I designed a six-by-12-meter water piece, divided into four three-by-six-meter ponds, 20 centimeters deep, with polyethylene inserts to prevent leaks. Each pond had a different salinity, and each was inoculated with algae from my experiments at Scripps. The algae were fed and thereafter inoculated with brine shrimp eggs; the sun was the engine. The algae took on different colors, and the shrimp farm appeared as a four-stripe painting; the Dada aspect of my persona also liked the idea of "growing" a color field painting.

The algae became stronger and stronger. As the months passed, many of the indoor works that were electronically driven began to run into technological difficulties. I liked the idea that for my work, the sun was the engine, and I wasn't having any technological difficulties.

Many of the works inside the museum cost 50,000 dollars or more (including my own *Artificial Aurora Borealis*); I liked the idea that the shrimp farm cost only 700 dollars—barely more than one percent of the average cost of a work in the show.

After a few months, the algae began to smell. The colors didn't look very crisp. In the last week of the exhibition, I publicly harvested, weighed, and bagged the salt, which I sold at below the cost of salt in the supermarket. I liked the idea of harvesting an algae-driven work of art. Above all, I liked the idea of making a complex, utilitarian work that functionally countered the all-too-prevalent notion that "if it was utilitarian, it was not art." (In this instance, calculations indicated that if scaled up, the artwork could produce 18,000 kilograms of brine shrimp per hectare.)

The exhibition ended, and the shrimp farm was removed and in part recycled.

My, Helen's, first performative act in the *Survival Pieces* was to use the brine shrimp to create a feast. There was one little problem, however. No one in their right mind would eat them! The taste was appalling, with a slightly rotting, crunchy, and extremely salty algae-like flavor.

I tried making a fish soup. No luck. Adding capers made the broth a little better. Anchovies made it possible to take a taste, but nobody wanted a mouthful. In a last-ditch effort I mixed the shrimp, capers, and anchovies in a blender, then added chopped chili peppers to make it a bit spicy. During performance mode at art parties, people felt somewhat obliged to taste a dollop on a cracker—but no one asked for seconds!

When researchers at University of California Davis heard about my attempt to make a brine shrimp feast, they asked for my recipe. I asked why, and they said they had gotten a government grant to test brine shrimp as a possible food source for space flight (they also wanted to test it as a possible element in a spaceship purification system). I explained at some length the depth of my failure to make these little crustaceans acceptable to the human palate. Later I heard that they had returned the grant.



Brine shrimp ready for harvest

Feeding the algae

The right pond ready for salt harvest, the left pond ready for brine shrimp harvest

Harvesting the brine shrimp

The salt yield

Bagging and weighing: preliminary to sale on the street corner

